

Specification for Embraco Scroll Compressor

MODEL: ELF13G-A1-LCBM

RECORD OF REVISIONS

NO.	PAGE	DESCRIPTION	DATE	REVD.

ELF13G-A1-LCBM Technical Specifications

Contents

1. Specifications	1
2. Configuration	1
3. Attachments	2
4. First Test Condition (°C)	2
5. Internal Protection Parts	2
6. Performance Data	3
7. Application Envelope	4
8. Drawing	
9. Electrical Diagram	
10. Accessories list	

1. Specifications

Model	ELF13G-A1-LCBM	Power	4HP
Displacement(m ³ /h)	11.7	Refrigerant	R404A
Cooling Cap.(W) ^(a)	3035	Input Power(W) ^(a)	2618
Rated Load Amps(A) ^(a)	4.8	COP ^(a)	1.16
Max. Vibration(mm) ^(a)	<0.10	Sound Level (dBA) ^(a)	73
Test Power Source ^(a)	50Hz-380V	Rated Speed (RPM) ^(a)	2900
Max. Moisture (mg)	< 500	Max. Impurity (mg)	< 100
Oil Circulation (%) ^(a)	<1%	Weight (kg, With Oil)	28
Electrical Specification	Power Source	380V-420V 3~50Hz 460V 3~60Hz	
	Run Capacitor	/	
	Min. Operation Voltage(V) ^(b)	342	
	Max. Operation Voltage(V)	462	
	Min. Starting Voltage(V) ^(c)	323	
	Lock Rotor Amps(A)	61.00	
	Max. Operation Current ^(d)	8.8 (A)	
Terminal Resistance (Ω) (± 10%) At 25 °C	T1(C)-T2(S)	3.058	
	T2(S)-T3(R)	3.138	
	T3(R)-T1(C)	3.216	
	Oil Type	POE	
Lubrication	Initial Charge(L)	1.4	
	Recharge(L)	1.25	
	Insulation Voltage(V)	2500	
Electrical Safety	Leakage Current(mA)	≤5	
	Insulation Resistance(MΩ)	>20	
	Ground Resistance(Ω)	<0.1	
	Max. Operation Pressure	High Side(MPa) 3.2 Low Side(MPa) 2	

Notes:

- Test Condition: Based On Test Power Voltage, First Rated Condition
- Test Condition: ET 0°C, CT 60°C, SH 11.1K
- Test Condition: Discharge/Suction Pressure Set To Refrigeration Saturation Pressure At 40°C
- Test Condition: ET 0°C, CT 60°C, SH11.1K, 90% Min. Rated Voltage

2. Configuration

Suction/Discharge	Injection	Sight Glass	Thermal Tube
	Liquid		

3. Certifications

Certifications	Report N.O.
CB	CNCVC0980
CE	LVDJX22-0022
CCC	CVC23008010034
PED	/
UL	/

4. First Test Condition (°C)

Cooling Cap. and COP No Less Than 95% of Nominal Value, Power and Current No More Than 105% of Nominal Value (Performance And Sound Power Need 24hrs Break In At High Load Running Condition).

Item	Parameter	Value
1	Evaporating Temp.	-31.7

2	Condensing Temp.	40.6
3	Ambient Temp.	35.0
4	Super Heat	50
5	Sub Cooling	0

5. Compressor Protection Parts

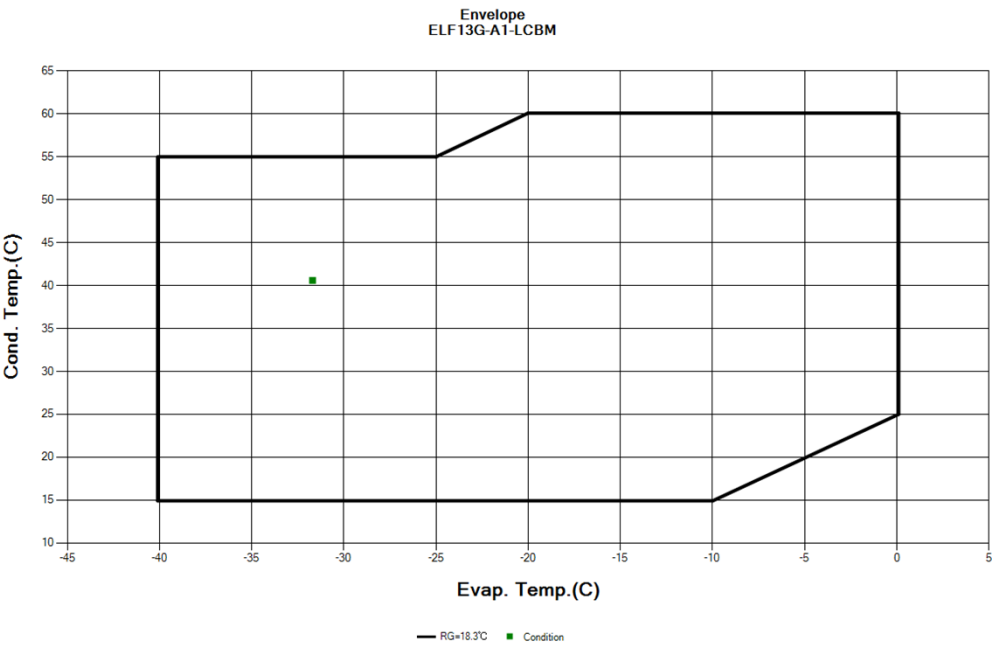
- a) Thermal Protection Inside:3HPD-428;
b) Internal Pressure Release Valve, Open Range (Pressure Difference Between Discharge And Suction) : 2.76~3.10Mpa

6. Performance Data- ELF13G-A1-LCBM

kW	Temp. Cond. (°C)	Temp. Evap. (°C)								
		-40	-35	-30	-25	-20	-15	-10	-5	0
Cooling Cap.	60					2.75	3.40	4.15	4.99	5.91
	55					3.25	4.01	4.88	5.86	6.93
	50	1.44	1.85	2.36	2.98	3.72	4.58	5.56	6.67	7.88
	45	1.62	2.08	2.65	3.34	4.16	5.12	6.21	7.44	8.79
	40	1.79	2.31	2.93	3.69	4.58	5.63	6.83	8.17	9.64
	35	1.96	2.52	3.20	4.03	5.00	6.13	7.43	8.88	10.46
	30	2.14	2.74	3.48	4.36	5.41	6.62	8.01	9.57	11.26
	25	2.31	2.96	3.75	4.70	5.82	7.12	8.60	10.26	12.06
	20	2.50	3.20	4.04	5.06	6.25	7.64	9.21	10.96	
	15	2.70	3.45	4.36	5.44	6.71	8.18	9.85		
Input Power	60					4.19	4.36	4.50	4.62	4.72
	55					3.82	3.97	4.10	4.21	4.30
	50	2.88	3.03	3.18	3.33	3.47	3.61	3.73	3.84	3.92
	45	2.63	2.76	2.89	3.03	3.16	3.29	3.40	3.50	3.59
	40	2.40	2.51	2.63	2.75	2.88	3.00	3.11	3.21	3.30
	35	2.18	2.28	2.39	2.50	2.62	2.74	2.85	2.96	3.05
	30	1.98	2.07	2.17	2.28	2.40	2.52	2.63	2.74	2.85
	25	1.80	1.88	1.98	2.09	2.20	2.32	2.45	2.57	2.68
	20	1.63	1.71	1.80	1.91	2.03	2.16	2.29	2.43	
	15	1.48	1.55	1.65	1.76	1.89	2.03	2.17		

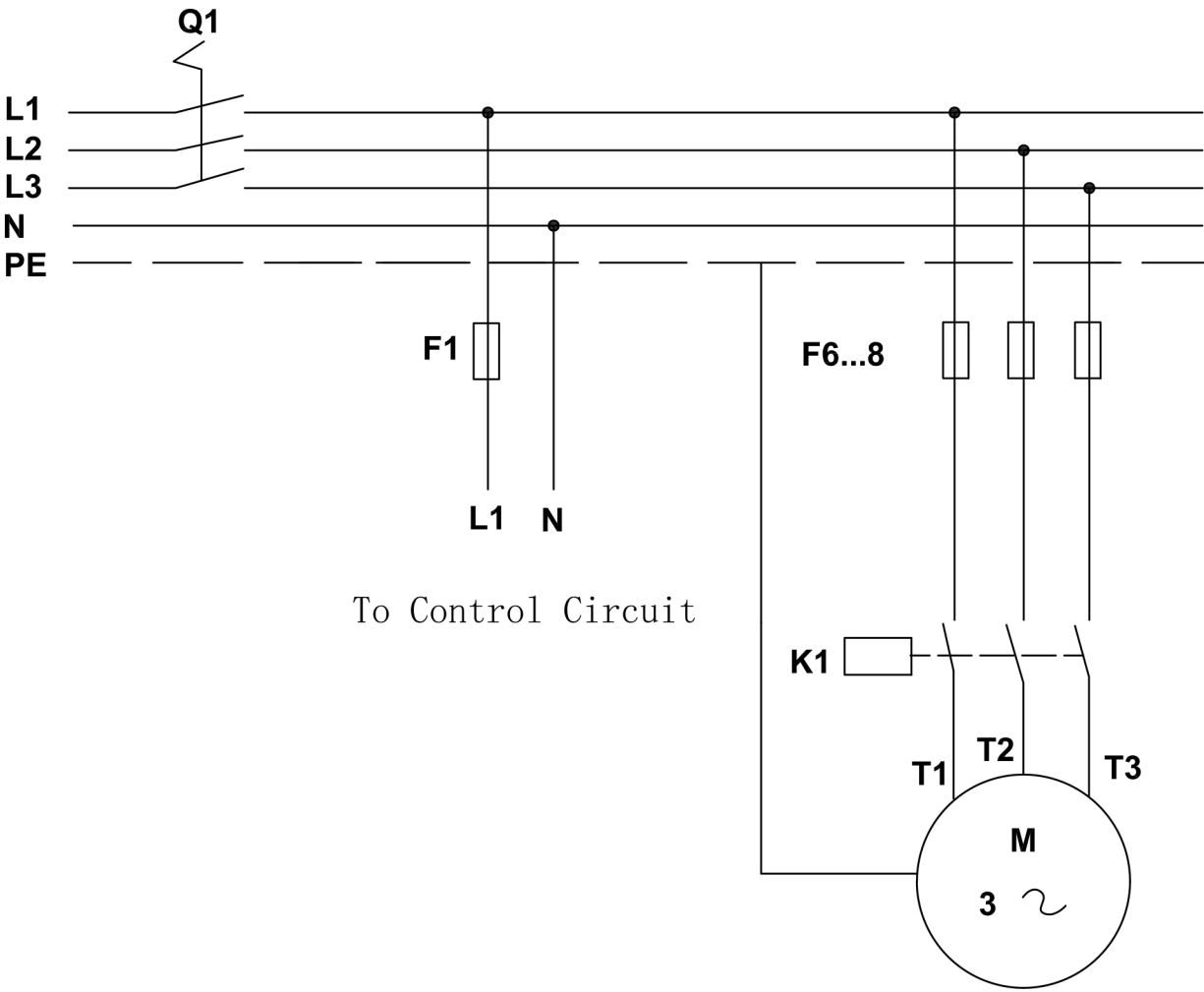
Notes: Capacity Calculation Based On SH=11.1K And Zero Sub Cooling

7. Application Envelope



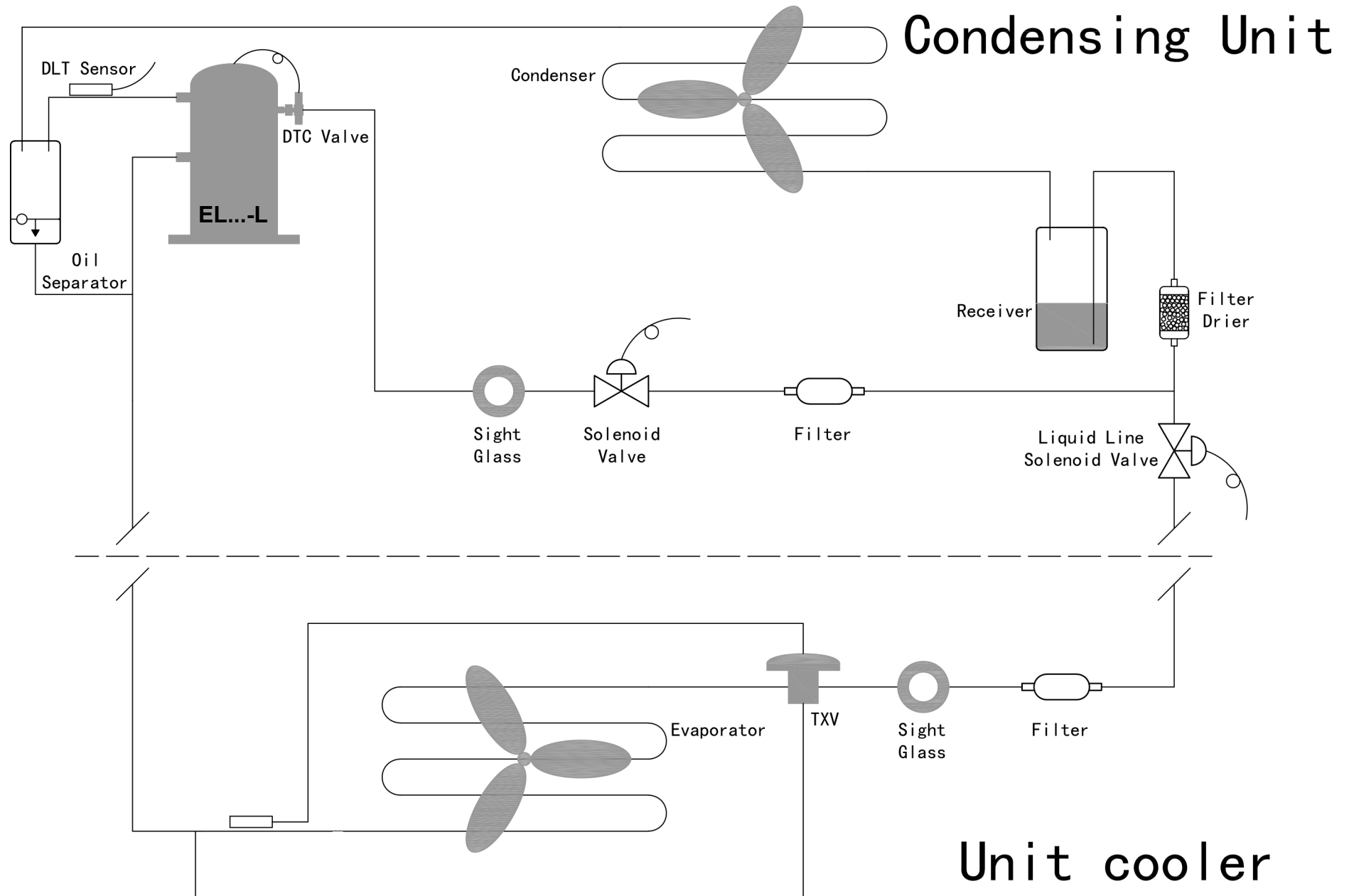
For compressor safety, shutdown compressor when DLT is above 125°C.
Restart compressor when DLT is below 85°C.

8. Drawing



- Electrical Schematics
- L1/L2/L3/N/PE: 3 Phase Lines(line/neutral/ground)
- Q1: Manual Switch
- F1/F6...8: Fuse
- K1: Compressor Contactor
- M: Compressor Motor
- T1/T2/T3: Compressor Terminal

Liquid injection schematic



Accessories List

Part N.O.	Specification	Part Name	Description	Qty	Type	Picture
505-0006-00	90°C	DTC Valve		1	Standard	
009-0015-00	11.5*14.5*1.3	DTC Seal		1	Standard	
019-0002-00	11.1*29.5	Sleeve Spacer		4	Standard	

Accessories List

020-0001-00		Terminal Seal		1	Standard	
200-0001-00		Rubber		4	Standard	
100-0006-00	M5x8,GB/T5789	Bolt		4	Standard	
017-0000-00	IP21	Terminal Cover		1	Standard	

Accessories List

016-0001-00		T-Box		1	Standard	
034-0000-03		Sound Jacket		1	Optional	
028-0000-00	OD:155, 70W, 220V, L:485	Crank Heater		1	Optional	
031-0015-00		Oil Adapter		1	Optional	
033-0005-00	OUT580R/GOA114	Oil Regulator		1	Optional	

Accessories List

031-0019-00	1"-14UN 2A	RotaLock Connector		1	Optional	
031-0017-00	1-1/4"-12UNF-A	RotaLock Connector		1	Optional	
030-0000-00	1-1/4"-12UNF	Sight glasses		1	Standard	
200-0002-00		Steel		4	Optional	